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SWYM

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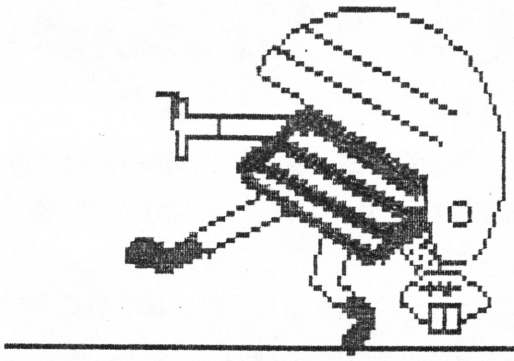

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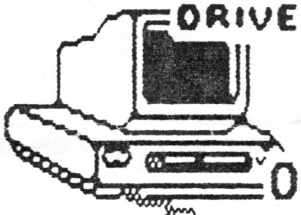

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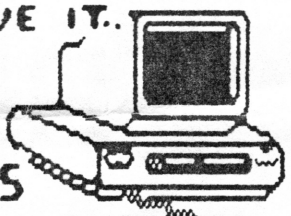

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NEXT MEETING

SEPT 3,1992

OCT 1, 1992

7:30 P.M.

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Emulators...Copycat, not Copyright! Also, more GUTS and EPROM!

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More of our loyal readers check in.

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Want to do real work with your Sinclair in the best time? Dale Fritz analyzes the best sort routine, just for you.

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Before you splurge for that big, new, 486 PC, read Gil Parrish's article.

EMULATION MAGIC

Sinclair computers emulating PCs, PCs emulating Sinclair computers; where will it all end? This is a very exciting era, for us, which eventually means that we'll be able to hack at our beloved micros for a number of years, yet. As an example for precedent, the Commodore 64 computer was well on its way into history until high-density disk drives and a clever program called Big Blue Reader (to read IBM-formatted disks) came out and gave the machine a humongous revival. In fact, if you can obtain a copy of the October 1991 issue of Commodore's RUN Magazine, you can get an idea as to how these guys do IBM compatibility.

A recent phone call widened my personal horizons on the subject of Sinclair/IBM compatibility, and made me realize that there is more going on, here, than what was previously known.

How would you like to export data from your 2068 to your Amiga? Or how about running a "Spectrum cassette" emulator on your IBM PC?? These things and more are being done, right now, in the same pioneering spirit that started the computer revolution in the first place.

PC hardware devotees are aware that within 802386-and-up CPU chips, lies the ability to emulate a Z80! This is THE developing plank for Sinclair/IBM compatibility. Once in this mode, a method must be found to directly upload data-carrying programs from the Sinclair, for either direct running, or loading data-only into a PC application. This particular scenario would work with textfiles or large spreadsheets. Generic Sinclair graphics immediately pose a problem, as direct conversion into a recognizable PC form does not compute. An indirect way would be a breakdown of the particular CHR$ code's dot patterns and send those onto the PC screen (bit mapping).

While Z80 Emulation is obviously a big boon, it is not without its drawbacks. Because the PC or Amiga is dividing its collective load to be two machines at once, the execution speed of either one is degraded. What this means is that a particular program may run much slower on the Amiga or PC than it does originally on the Sinclair. Perhaps time and faster CPUs is the answer, here.

Just as this issue goes to press, we learn from Andre Baune, of ZX-91, of three Shareware programs recently developed by Carlo Delhez of the Netherlands:

XTricator - ZX81 emulation on your QL
Spectator - ZX Spectrum emulator on your QL
XTender - 64K ZX81 emulator on your MS-DOS machine.

For more information, write this newsletter, Andre Baune, or, better yet, Carlo Delhez, Emmastraat 3, 4651 BV Steenbergen, Netherlands.

SWYM welomes all questions, comments and developing ideas on this exciting aspect and any others that appeal to you.

MORE GUTS

Those Sinclair pioneers doing the GUTS project have taken several items out of the "Project Suggestions for T/S 1000" that appeared in the last issue, to apply to the GNU, Usenet, inTernet Server (GUTS) project. In case you think something's funny with the name, there, you're right. The "U" was changed from "Unix" to "Usenet" because Unix is a registered trademark of USL (Unix Systems Laboratories). How would you like to be a pioneer, too? Sure, you would! They're still looking for a good Sinclair Apaptor idea for file serving. Please give this some serious thought and write Bill Miller of SLIX, 6675 Clifford Drive, Cupertino, CA 95014. We'll all be glad you did!

EPROM UPDATE

We have a small accumulation of EPROM chips to burn, but one major item remains to be acquired; an ultra-violet light source, better

known as an EPROM eraser. While it would be nice to use EEPROMs (the electrically eraseable kind), that is not what we have and will need a UV light. On the hardware side of the programmer board, an interface cable has been successfully wired up, but it appears that in order to burn 128K EPROMS, we will need a new 74LS374 chip. The Oliger board, that we have, is populated with three of these, but one failed the check-out tests. Until we can get a new one, we will be stuck with programming 2764s (and even a couple of 2716s!).

THANKS, GUYS!

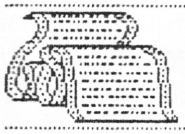
I want to thank remote SEATUG members Joan Kealy of Brakettville, Texas and Gil Parrish of Beggs, Oklahoma, for responding to the latest call for SWYM newsletter articles! It's stuff like this that keeps an editor going. All SEATUG members should thank President Malcolm Post, who, unofficially, has been serving double-duty as Secretary because nobody else wants to do it! Of course, no thanks would be complete without a sincere one to Dale Fritz, who consistently manages to come up with something fascinating for all SWYM readers.

Keep up the good work, gang!!

SWYM ADS

FOR SALE =

One Canon Ink Jet printer with a QL cartridge driver w/modified character set. $250. Also, JLO 2068 EPROM programmer, QL books. Make offer. Contact Mike DiRienzo, 1412 SW 102nd St. Seattle, WA 98116 206-935-9272



INPUT & OUTPUT

INPUT:

OK, you win. Your last newsletter prompted me to action, and the enclosed article is the result. You can, of course, retype it if you like, but I deliberately fit it into two full pages in case you just wanted to photocopy the pages for inclusion. They were written at work on an IBM AS/400 departmental word processor, so there was no way I could produce a disk of any kind to send you, nor any way to put this into "columns." But on the plus side, the output gets laser printed, and that may account for something.

I took a trip to Scotland recently, and wrote an article on "Britain's Spectrum Scene" for the Sinc-Link newsletter. I would have sent it to SWYM had I known you folks were desparate for material, but I had never written anything to Sinc-Link before and felt obligated as a Toronto member to contribute at least something during my membership. Yet, I'm also a SEATUG member and an avid SWYM reader, and wouldn't like to see either go down the drain, so I hope this contribution is not "too little, too late."

From a prior experience as a user group newsletter editor, I know meaningful feedback on a newsletter is hard to come by. About all I could assume was that not having a group of peasants with torches rushing towards my home at night probably menat I was doing OK. I think you're doing a good and valuable job as editor, and I can only urge you to keep it up!

Sincerely,
Gil Parrish
Beggs, OK

OUTPUT:

Thanks for the article and the kind words, Gil. It's members like yourself that will keep this, and any

other newsletter alive. I actually thought I heard peasants with torches, one night, but was relieved to see them heading toward an IBM-PC newsletter editor's house. And remember: SWYM is not just a couple of guys in Seattle. It's the entire nation-wide SEATUG membership.

----- *Chuck*

INPUT:

Enclosed is a 7K program. It is printed out on a TS2040, in case you have any trouble loading from cassette, though the program is saved 3 times and verified 3 times. This is a bare bones program that I'll expand to 15K.

So, now we are talking about why no one send programs anymore:

(1) All the good short programs suitable for typing into the machine were written and published years ago.

(2) Everything written by us longtimes has become more and more specialized as have our systems.

I have this short musical program on cassette for you, on Zebra and Larken systems for myself, so I can expand it on either one, but Zebra 3" disks are too expensive to mail around indiscriminately and Larken's seem to load (maybe) on other people's drives. If you are interested, I'll send you the Larken version, after expanded, for your disk library. At line 999 is Larken SAVE and at line 9998 is tape SAVE in the program on cassette.

Third reason I do not send programs anymore: Specifications like 'must be in MSCRIPT, double-column for such a printer, such a desktop publishing system, such a disk drive system.' PHOOEY!

Anyway, "You Are Always On My Mind."

Joan Kealy
Braketteville, TX

OUTPUT:

Thanks for the musical program, Joan. I really like the way the lyrics are displayed in time to the music.

As for the specs for article submission: A while back we were experimenting with different systems, found some we liked, and, owing to the proliferation of T/S software, thought that anyone wanting to submit articles would have no problem meeting our meager specifications. This has not been successful. Articles in ANY format are gladly accepted, now. Witness the recent ones from Malcolm Post and Gil Parrish. There are no such-and-such requirements, anymore!

Submitted programs don't have to be short, either. That era was popular when our micros were new, as you have stated. As we learn more about our machines, we can expect the degree of program complexity to rise. This is natural. If the program listing is 3 pages long, we'll print it!

----- *Chuck*

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SHELL SORTS

by Dale Fritz

Shell Sort, named for its inventor, D. Shell, is well known as a good all-purpose sort routine. Some other sort routines are faster but are not all-purpose. QuickSort is one of the fastest, when it is known that the data is random but falls flat on its face if the data is in any other order (such as partially sorted). Bin Sort is absolutely the fastest, but one must know the range of the expected values and duplicate values are not allowed. Another neat all-purpose sort routine is Heap Sort. It is slightly faster than Shell Sort but is considerably more complex, both in length and to understand. As one can see, I am partial to Shell Sort.

In an article in SyncWare News ("Sorting Through the TS 2068 Sorts", by Robert Fischer), Fischer spoke of more than one Shell Sort routine and noted that he liked the Shell-Faulk routine best. Upon review of the Shell-Faulk, it seemed similiar to a standard Shell sort listed in many textbooks and was, in fact, longer. To satisfy my curiosity, I tested the standard Shell (called Shell-Original) to the Shell-Faulk. The two routines as well as the results are shown below.

To my surprize, the simpler Original-Shell was only 1/2 to 2/3 as fast as the Shell-Faulk. Examining the routines side by side, it is not easy to see why. For those into sorting, however, I believe the results are useful information. Shell-Faulk is truly the best of the Shell sorts.

The Test

TiMachine was used on the BASIC test program to remove the "position" effect in Sinclair BASIC, where routines near the end of a program are slowed by stepping over program lines at the beginning. The filesize for sorting ranged from 19 to 4617, so as to point out any difference in capabilities. Integer random numbers were sorted since in TiMachine these take only two bytes. It is believed that much the same results would be obtained when sorting strings. The files to be sorted were identical for each sort routine and five runs with different random numbers were made for each file size.

The Shell Routines
Variables
  incr: boundary increment
  Num : file size
  d   : j + incr

```
 290 REM ..SR SWAP..
 295 REM Swaps (a(j),a(d)),
         Increments j and d.
 300 LET temp = a(j): LET a(j) =
a(d):
     LET a(d) = temp: LET j = j -
incr:
     LET d = j + incr
 310 RETURN

 490 REM ..SHELL-ORIGINAL..
 500 LET incr = INT (Num/2)
 510 FOR i = incr + 1 TO Num
 520 LET j = i - incr: LET d =
     j + incr
 530 IF j > 0 THEN IF a(j) > a(d)
     THEN GO SUB 300: GO TO 530
 540 NEXT i
 550 LET incr = INT (incr/2)
 560 IF incr > 0 THEN GO TO 510
 570 RETURN

 990 REM ..SHELL-FAULK..
1000 LET incr = Num
1010 LET incr = INT (incr/2)
1020 IF incr < 1 THEN RETURN
1030 IF incr/2 = INT (incr/2) THEN
     LET incr = incr + 1
1040 FOR i = 1 TO Num - incr
1050 LET j = i: LET d = j + incr
1060 IF a(j) > a(d) THEN
     GO SUB 300: IF j > 0 THEN
     GO TO 1060
1070 NEXT i
1080 GO TO 1010
```

The Test Results
Time Tests of Shell Sorts (seconds)

Size	Shell-Or	Shell-Flk
19	.0667	.0667
19	.05	.0667
19	.0667	.0667
19	.0667	.0667
19	.0667	.0833
Avg0f5	.0633	.07
57	0.283	0.3
57	0.3	0.317
57	0.333	0.283
57	0.283	0.283
57	0.317	0.283
Avg0f5	0.303	0.293
171	1.367	1.267
171	1.333	1.417
171	1.383	1.35
171	1.45	1.283
171	1.367	1.233
Avg0f5	1.38	1.31
513	9.167	5.117
513	8.717	5.183
513	8.033	5.1
513	8.633	5.0
513	8.533	5.35
Avg0f5	8.617	5.15
1539	40.2	19.55
1539	38.783	19.65
1539	51.283	19.783
1539	41.933	20.267
1539	42.067	19.8
Avg0f5	42.853	19.81
4617	106.783	77.483
4617	102.15	72.767
4617	117.267	80.2
4617	103.617	78.033
4617	112.267	81.617
Avg0f5	108.417	78.02

SWYM

SWYM is the official newsletter of the Seattle Area Timex Users Group. It is published bi-monthly with receipt due before the 1st Thursday of the expected month.

SUBSCRIPTIONS for non-Seattle area users are only $10/yr, to SEATUG, c/o Dave Battershill, Treasurer, P.O. Box 64462 Tacoma, WA 98464. Free exchanges are made between other related clubs via the newsletter exchange program.

ADVERTISING is accepted and encouraged! Full-page, half and quarter-page ad space is available. Contact Chuck Kereluck for rates.

ARTICLE CONTRIBUTIONS are welcomed and encouraged. Formats may be on typed, 8-1/2 X 11 plain, white paper. Columns are not necessary. Textfiles may be on magnetic media. If used, please use cassette tape from a 2068 or 1000. Mail to Chuck Kereluck. Articles (in either 2068 or ASCII format) may be uploaded to PHOTOSYNTHESIS (206)323-2433. 24-hour access. 8, 1, N. They may also be uploaded to Chuck Kereluck, directly. Call 206-523-5272 to arrange. If diagrams are used in pre-printed articles, use a mailer to accommodate the unfolded size. Articles supplied on ZEBRA FDD or IBM PC 5-1/4" or 3-1/2" disks are also acceptible. These will be returned to the author.

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O B S O L E S C E N C E

by Gil Parrish

I read with interest SWYM's last issue asking the rhetorical question "Can We Stay Shielded from the (IBM) Sun?", including the comment that SWYM may drown (pardon the pun) without more participation and interest. The latter prompted this article, but the initial question got me thinking on the whole topic of obsolescence.

With computer prices for MS-DOS systems dropping like a stone daily, lots of people have probably considered converting over. However, from a financial perspective, the smartest move in a time of rapidly dropping prices is to stick with your old equipment as long as it serves your needs.

Think about it. Suppose a year ago you had wanted a 33MHz '386 MS-DOS system. At the time, that would have been a fairly leading-edge, high powered machine (with '286 systems being low-end, and '386SX systems being mid-range). Being "leading-edge", such a system probably could not have been found in the used equipment market. So you'd have paid a goodly sum for a new one.

A year later, prices are way down. A 33MHz '386 system is practically a low-end "starter" system now-- about the minimum you need to run the popular "Windows" GUI-- with '486SX machines being mid-range and full-blown '486 systems being high-end. The value of your '386 would have fallen with every price reduction, not to mention the jolt it took going from a "new" machine to a "used" machine. So how much less would your '386 be worth after a year? $500 less? $750 less? Or maybe a full $1000 less? That's a pretty hefty fee for a year of computing.

But suppose instead you had purchased $150 of T/S hardware in the used market, and-- just for the sake of argument-- suppose such equipment is only worth $75 today. That would be a significant percentage loss, but you'd only be out $75, compared with that '386 user's $500-$1000 loss. Get the picture?

My second point is that "obsolescence" is in part a state of mind. A particular user may outgrow a particular system; but, another user might have all of his needs met by an older system others call "obsolete". Should the user have to junk a system just because OTHER PEOPLE believe it is obsolete? I would certainly hope not, but the sad fact may be that some users feel they have to, simply because others quit providing support for "obsolete" systems, and the users feel compelled to turn to a different system just because of that. On the other hand, if an older model somehow avoids the "obsolete" title, you

may be amazed at what the machine can still do once given the chance.

One clear example of this is provided by a facinating game which originated on the Commodore Amiga, and has since spread to the MS-DOS world, called "Lemmings". This software was voted Most Original Game, and Computer Game of the Year, at the 1991 European Trade Show in London, and has received similar accolades here. Basically, every level of the game involves a whole bunch (up to 100) of the cute little Lemming creatures appearing one at a time through a trap door that pops up on screen, with each Lemming following the one before it to an unfortunate demise unless you create a safe path for them to follow. Each level features a weird landscape with boiling waters, burning coals or other active obstacles; combined with the background music, sound effects, the special activities of the Lemmings you control (building bridges, tunneling passages, etc.), and of course the remainder of the 100 Lemmings milling all about at the same time, the package is quite impressive. On the Amiga, two 880K disks are used to contain the game; you couldn't possibly translate it to a small-memory eight-bit system-- right?

Wrong. For the Spectrum, the European close-cousin of the T/S 2068, not only has a Spectrum version of Lemmings become available in Great Britain, but also the software is TAPE-based since most Spectrum users in the U.K. still utilize tape drives. In this country, no one puts out software on tape anymore, and nobody has tried to market a version of Lemmings for the Commodore 64, T/S 2068 or other eight-bit systems. But in Europe, the stream of advanced software continues for tape based eight-bit systems. Recent ads for other Spectrum tape software include "The Addams Family" (yes, based on the movie and not the old T.V. series), and a game based on the latest "Robocop" movie.

In short, attitude is half the battle. European Spectrum users don't view their computers like disposable diapers; and so, the systems aren't treated as disposable by the commercial community. Spectrum hardware is available off-the shelf in stores; Spectrum magazines (including the excellent Your Sinclair) are available at newsstands all over town and by subscription; and, new software keeps appearing. If in contrast we Americans treat our own computers as disposable, can we really blame others for lack of support?

So, whether SWYM continues to stroke forward (another pun?), and whether T/S computers continue in use, is really a decision T/S users must make. Our fate is in our hands.